

CLAIMS

What is claimed is:

- 1 1. A line card within a switching node coupled to a network, said line card
2 comprising:
3 a link interface for transmitting communications along a communication
4 link within said network;
5 said link interface including a plurality of logical entities;
6 each logical entity is governed by a set of bandwidth usage rules.
- 1 2. The line card of claim 1, wherein each logical entity is selected from the
2 group consisting of:
3 a buffer, a partition, a logical interface and a class of service.
- 1 3. The line card of claim 2, wherein the bandwidth usage rules include a
2 maximum allowable bandwidth usage and a minimum bandwidth guarantee.
- 1 4. The line card of claim 3, wherein the maximum allowable bandwidth is
2 the maximum amount of bandwidth that any logical entity can reserve.

2 the guaranteed bandwidth assigned to a given logical entity, such that the

3 guarantee is not affected by bandwidth usage or configuration changes of any

4 other logical entity.

1 6. The line card of claim 3 wherein the line card can check the minimum

2 bandwidth guarantee of each logical entity.

1 7. The line card of claim 3 wherein the line card can check the maximum

2 bandwidth.

1 8. The line card of claim 3, wherein the line card can enforce the set of

2 bandwidth usage rules when the configuration of the logical entities changes.

1 9. A method comprising:

2 transmitting communications along a communication link of a network,

3 the communication link including a plurality of logical entities; and

4 governing each logical entity by a set of bandwidth usage rules.

1 10. The method of claim 9, wherein each logical entity is selected from the

2 group consisting of:

3 a buffer, a partition, a logical interface and a class of service.

1 11. The method of claim 10, wherein the bandwidth usage rules include a
2 maximum allowable bandwidth usage and a minimum bandwidth guarantee.

1 12. The method of claim 11, wherein the maximum allowable bandwidth is
2 the maximum amount of bandwidth that any logical entity can reserve.

1 13. The method of claim 11 wherein the minimum bandwidth guarantee is
2 the guaranteed bandwidth assigned to a given logical entity, such that the
3 guarantee is not affected by bandwidth usage or configuration changes of any
4 other logical entity.

1 14. The method of claim 11 further comprising checking the minimum
2 bandwidth guarantee of each logical entity.

1 15. The method of claim 11 further comprising checking the maximum
2 bandwidth.

1 16. The method of claim 11 further comprising enforcing the set of
2 bandwidth usage rules when the configuration of the logical entities changes.

1 18. The apparatus of claim 17, wherein each logical entity is selected from
2 the group consisting of:
3 a buffer, a partition, a logical interface and a class of service.

1 19. The apparatus of claim 18, wherein the bandwidth usage rules include a
2 maximum allowable bandwidth usage and a minimum bandwidth guarantee.

20. A computer readable medium having instructions which, when executed by a processing system, cause the system to perform a method comprising:

- transmitting communications along a communication link of a network, the communication link including a plurality of logical entities; and
- governing each logical entity by a set of bandwidth usage rules.

1 21. The medium of claim 20, wherein each logical entity is selected from the
2 group consisting of:

3 a buffer, a partition, a logical interface and a class of service.

1 22. The medium of claim 21, wherein the bandwidth usage rules include a
2 maximum allowable bandwidth usage and a minimum bandwidth guarantee.

1 23. The medium of claim 22, wherein the maximum allowable bandwidth is
2 the maximum amount of bandwidth that any logical entity can reserve.

1 24. The medium of claim 22, wherein the minimum bandwidth guarantee is
2 the guaranteed bandwidth assigned to a given logical entity, such that the
3 guarantee is not affected by bandwidth usage or configuration changes of any
4 other logical entity.

1 25. The medium of claim 22, wherein the executed instructions cause the
2 system to further perform: checking the minimum bandwidth guarantee of
3 each logical entity.

1 26. The medium of claim 22, wherein the executed instructions further cause
2 the system to perform: checking the maximum bandwidth.

1 27. The medium of claim 22, wherein the executed instructions further cause
2 the system to perform: enforcing the set of bandwidth usage rules when the
3 configuration of the logical entities changes.

1 28. An apparatus comprising:
2 a transmitter to transmit communications along a communication link of
3 a network, the communication link including a plurality of logical entities; and
4 a governor to govern each logical entity by a set of bandwidth usage
5 rules.

1 29. The apparatus of claim 28, wherein each logical entity is selected from
2 the group consisting of:
3 a buffer, a partition, a logical interface and a class of service.

1 30. The apparatus of claim 28, wherein the bandwidth usage rules include a
2 maximum allowable bandwidth usage and a minimum bandwidth guarantee.